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SHORTIA GALACIFOLIA FROM GEORGIA

WILBUR H. DUNCAN, HASKELL VENARD AND G. W. McDOWELL

ON 8 December, 1788, André Michaux collected *Shortia galacifolia* Torr. & Gray at the headwaters of the Keowee River (in Oconee County, South Carolina). He placed the material of this collection in his herbarium among "planta*e* ignotae", where Asa Gray found it early in 1839. From that time until the present much has been written about *Shortia*. Probably no other plant in the eastern United States has received so much attention by botanists. Its history since 1839 is well summarized by Jenkins¹ in 1942, a little more being added by Prince² in 1947. Up to 1949, *Shortia* had been found growing wild in McDowell, Transylvania and Macon Counties (?), North Carolina; and in Oconee County, South Carolina. On 19 March, 1949, the authors located a colony in Rabun County, Georgia, the third state and fifth county in which *Shortia* is known to grow.

Since 1939, the senior author had been looking more or less casually for *Shortia* in northeast Georgia, but without success. More recently the junior authors also became interested in the possibility of locating the plant in this same area. During the first two months of 1949 plans gradually materialized for a joint trip to search for the species. Saturday, 19 March, was chosen as the date when all could make the trip and have the most promise of locating flowering plants (A. E. Prince et al., collected flowering material in Oconee County, South Carolina, on 18 March, 1944).

¹ C. F. Jenkins, *Arnoldia* 2: 13-28.

² A. E. Prince, *RHODORA* 49: 159-161.

The weather had been unseasonably warm for some time, but on Saturday morning the roadside banks were heavy with frosted earth. As we drove out of Walhalla, South Carolina, frost could be seen on the mountains in the distance. Soon we were climbing the mountain grade north of Pine Mountain Post Office, Georgia, and before long had turned to the right on the Burrell's Ford-Glade Mountain road. Frequent stops were made to search in places that seemed the most likely to support a colony of *Shortia*.

The afternoon found us in the Reed Creek area southwest of Glade Mountain. One stop along the narrow forest-road was at an area of exceptional relief, a precipitous ravine nearly south of Glade Mountain. We were walking single-file under *Kalmia* and *Rhododendron* along the steep slopes of the ravine a short distance from the creek, when suddenly the senior author, who was leading the file at that time, saw a colony of *Shortia*. The colony was about 8 feet long and 4 feet wide. Less than twenty inches from the far end of the colony was the end of an icicle about 18 inches long. Even in spite of the cold weather, flowers could be seen here and there over the colony. Inspection showed that they were among the last of the season as there were many peduncles, each with a persistent calyx, and there were no more flower-buds. Pictures were taken and specimens collected (*Duncan* 9083, with McDowell and Venard).

It seemed that there should be other colonies but an additional search of over an hour was fruitless (On another trip in August the senior author did locate another small colony deep in the ravine over a hundred yards from the first colony). We were happy about finding *Shortia* in another state on the first trip that any of us had made with definite plans to look for it, and contrasted our good fortune with the fruitless search for the species by Asa Gray and others over a period of 40 years following 1839. The fact that previously discovered localities in adjacent South and North Carolina were of considerable assistance in directing our search did not dim our elation.

Although much has been written about the history of *S. galacifolia*, one part seems to have been neglected—that part covering the period of many thousands of years before Michaux collected it in 1788 at the headwaters of the Keowee. *S. galaci-*

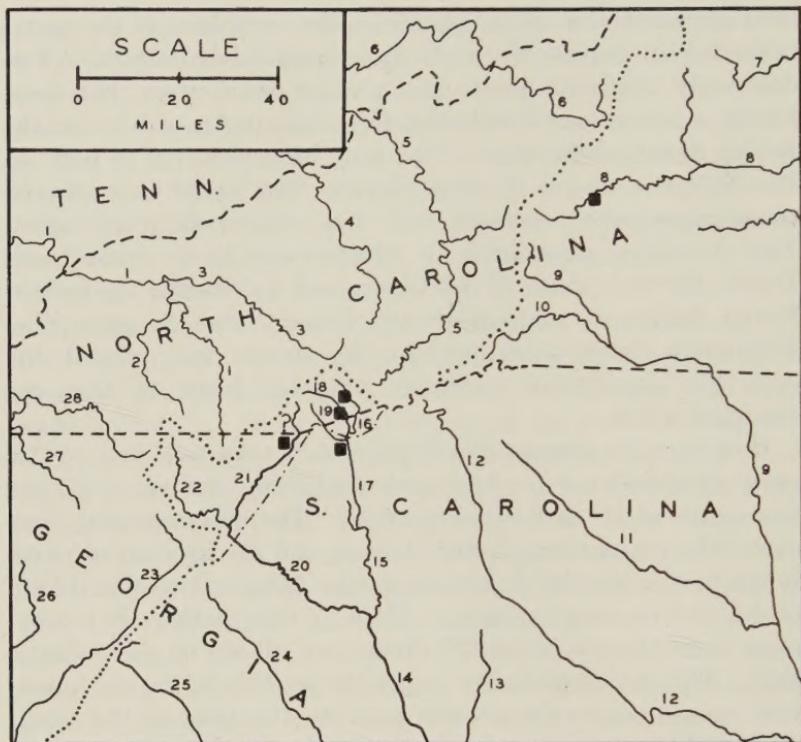
folia apparently is an old species, other members of the genus occurring in Japan, Formosa and southwestern China.³ Undoubtedly the genus had a much wider distribution than now, having a continuous distribution from Asia to America across the Bering Strait land-bridge. This may have occurred as early as the Oligocene, an era of warm climates that would have allowed temperate plants to occupy those areas nearer the polar region. The American population of *Shortia* was likely widespread. During the later phases of this widespread distribution the eastern North American component undoubtedly was *S. galacifolia*. Ultimately the area occupied by this species was reduced, the surviving populations occurring near the heart of the area occupied earlier.

How does the present distribution of *S. galacifolia* fit into this story of abundance in older geological times and survival near the center of an earlier distribution? The accompanying map shows the present known distribution, and the location of rivers in relation to the divide separating the Atlantic Ocean and Gulf of Mexico drainage systems. None of the stations is located more than 15 miles from the divide and all are on the Atlantic side. This divide probably marks the position of the old mountain ranges that were present prior to the time of the Great Smoky Mountain overthrust that raised the area near the Tennessee-North Carolina state-line until it included the highest mountain ranges in the eastern United States. The streams, however, maintained their general drainage pattern, preserving the old divide, a reminder to us of the geologic past when the highest mountain ranges were there, perhaps at the very heart of the area occupied by *Shortia*.

The fact that *S. galacifolia* occurs solely on the Atlantic side of the divide (see map) may be of little or no purport because some of the present stations may have been in the Gulf drainage. It is generally accepted that the Chattooga and Tallulah Rivers of the Savannah River System were once a part of the Chattahoochee River System.⁴ Also, drainage in the upper tributaries of the Keowee may have been reversed, flowing into the Tuckaseegee River and finally into the Gulf. It is likely, therefore, that

³ See "Sino-Himalayan Species of *Shortia* and *Berneuxia*" by Hui-Lin Li in *RHODORA* 45: 333-337, 1943.

⁴ N. M. Fenneman. *Physiography of the Eastern United States*. 714 pp. 1938.



MAP 1. Portions of Tennessee, North Carolina, Georgia, and South Carolina showing localities, indicated by black squares, where *Shortia galacifolia* is known to have been collected. The question mark (?) represents a Macon County, N. C., collection which is in doubt. The present divide separating the Atlantic Ocean and the Gulf of Mexico is indicated by a dotted line. Probable location of a portion of the divide prior to major stream piracy is indicated by a line of dots alternated with dashes. Numbers are for names of rivers as follows: 1. Little Tennessee. 2. Nantahala. 3. Tuckasegee. 4. Pigeon. 5. French Broad. 6. Nolichucky. 7. Yadkin. 8. Catawba. 9. Broad. 10. Green. 11. Enoree. 12. Saluda. 13. Little. 14. Savannah. 15. Seneca. 16. Toxaway. 17. Keowee. 18. Horsepasture. 19. Whitewater. 20. Tugaloo. 21. Chattooga. 22. Tallulah. 23. Chattahoochee. 24. Broad. 25. Oconee. 26. Etowah. 27. Nottley. 28. Hiwassee.

S. galacifolia once occurred on both sides of the old divide. The possibility of its occurring at the present time on the Gulf side of the divide is good. The tributaries of the upper portion of the French Broad River or the Green River would seem to be the most promising areas in which additional stations of *Shortia* might be discovered. Botanists visiting these areas should be on the lookout for the species.

STUDIES IN THE CARYOPHYLLACEAE—IV

A SYNOPSIS OF THE NORTH AMERICAN SPECIES OF THE
SUBFAMILY SILENOIDEAE¹

BASSETT MAGUIRE

IN a further review of materials in the *Caryophyllaceae*, it has become necessary to re-examine and re-assess certain complex genera with the aid of more recently collected specimens, and in the light of recent works of a number of critical students.

It is proposed here to list the categories recognized at this time, and to offer with some comment new names and arrangements that seem necessary. Adequate material and field-observations are yet insufficient, and experimental data almost completely lacking; therefore more satisfactory interpretation of boreal groups must await further field study and collection, even beyond the extensive work of J. P. Anderson, Fernald, Hultén, Polunin, A. E. Porsild, Raup and others.

KEY TO THE GENERA

1. Styles 5 (in some species occasionally 4, but predominantly 5).
 2. Sepal-lobes much shorter than the tube; petals appendaged. 1. *Lychnis*.
 2. Sepal-lobes much exceeding the tube; petals not appendaged..... 2. *Agrostemma*.
 1. Styles 3 (in some species occasionally 4, but predominantly 3).... 3. *Silene*.
 1. Styles 2.
 3. Calyx ebracteate.
 4. Stamens 10; calyx more than 2 mm. broad.
 5. Flowers 2 cm. or more long.
 6. Calyx tubular, 20-nerved; petals appendaged..... 4. *Saponaria*.
 6. Calyx ovoid, strongly wing-angled, 5-costate; petals not appendaged..... 5. *Vaccaria*.
 5. Flowers 1 cm. or less long 6. *Gypsophila*.
 4. Stamens 5; calyx narrowly cylindrical, 1 mm. or less broad..... 7. *Velezia*.
 3. Calyx subtended by 1–3 pairs of bracts.
 7. Calyx 30–40-nerved..... 8. *Dianthus*.
 7. Calyx 5-ribbed or 15-nerved..... 9. *Tunica*.
 1. LYCHNIS L. Sp. Pl. ed. 1. 436. 1753; Gen. ed. 5,
 no. 517, 198. 1754.

The writer can adduce no new evidence to lend persuasion in the already long-held and extensive discussions that have engaged consideration of generic limitations in the *Silene-Lychnis* com-

¹ For a revision of the North American species of *Silene* see: C. L. Hitchcock & Bassett Maguire, Univ. Wash. Pub. Biol. 13: 1–73. 1947.

plex of the *Silenoideae*. He is compelled by reason of lack of significant or consistent characterization to reject the name *Melandrium* as it has so frequently been applied to segments of both the more natural population assemblages, *Silene* and *Lychnis*. In this respect he follows the long line of eminent students of American botany, Gray, Watson, Robinson, Fernald and Polunin, who have given detailed study to the family.

KEY TO THE SPECIES

1. Capsular dissepiments prominent.
2. Stems 0.5–3.0 dm. tall; caudine leaves lacking; plants of eastern boreal America and Greenland. *L. alpina*.
2. Stems 3.0–8.0 dm. tall; caudine leaves usually 2–4 pairs; occasional weed of northeastern United States. *L. Viscaria*.
1. Capsular dissepiments completely obsolete, or represented merely by inconspicuous basal ridges.
2. Plants variously pubescent, but not tomentose; calyx-lobes plane.
3. Principal leaves 0.5–1.5 cm. wide; caudine leaves 4 pairs or fewer; stems not leafy.
4. Flowers few (1–9); inflorescence not paniculate.
5. Flowers nodding in anthesis; petals included or barely exserted; calyx usually conspicuously inflated at maturity; seed wing-margined. *L. apetala*.
5. Flowers erect in anthesis; petals included, barely exserted, or conspicuously exserted; seed wing-margined or wingless.
6. Calyx somewhat inflated; stems 5–30 cm. tall; plants of arctic, boreal, or alpine habitats.
7. Petals conspicuously exserted by 3–10 mm.; arctic or boreal.
8. Seed wing-margined; stems more or less strongly pubescent, not subpilose; 1-flowered or occasionally loosely 3 (5)-flowered. *L. furcata*.
8. Seed wingless; stems subpilose or in ssp. *Dawsoni* more or less strongly pubescent; cymes closely 3–5 (rarely 1)-flowered. *L. triflora*.
7. Petals inconspicuously exserted by 1–3 mm.; alpine plants of central or southern Rocky Mountains. *L. Kingii*.
6. Calyx closely investing the capsule; stems 30–60 cm. tall; plants of austral montane habitats.
7. Calyx-lobes merely puberulent; stems uniformly finely puberulent, becoming glandular in the inflorescence; plants of western United States and Canada. *L. Drummondii*.
7. Calyx-lobes densely lanate; stems, at least above, more or less lanately pubescent, non-glandular in the inflorescence; plants of Mexico. *L. mexicana*.
4. Flowers many; inflorescence openly paniculate. *L. Flos-cuculi*.
3. Principal leaves 1.5–4.0 cm. wide; caudine leaves 5 pairs or more; stems leafy; flowers numerous.
4. Calyx much inflated; inflorescence not congested.
5. Flowers white; opening in the evening. *L. alba*.

5. Flowers red; opening in the morning..... 10. 9. *L. dioica*.
 4. Calyx not inflated.
 5. Inflorescence congested..... 11. 10. *L. chalcedonica*.
 5. Inflorescence openly paniculate..... 12. 11. *L. Flos-cuculi*.
 2. Plants densely tomentose; calyx-lobes twisted..... 13. 12. *L. coronaria*.

1. LYCHNIS ALPINA L. Sp. Pl. ed. 1. 436. 1753. *Viscaria alpina* (L.) G. Don, Gen. Syst. 1: 415. 1831. *L. alpina* L. var. *americana* Fern. RHODORA 42: 259. 1940. *L. alpina* L. var. *americana* Fern. forma *albiflora* (Lange) Fern. RHODORA 42: 259. 1940.

DISTRIBUTION: A uniform population, mostly of "poorly vegetated areas of well-drained but damp, sandy soil." Boreal western Siberia, Europe, to 70° N. in Greenland, and North America in Labrador, Newfoundland, Gaspé, and the west shore of James Bay, Quebec.

2. LYCHNIS VISCARIA L. Sp. Pl. ed. 1. 436. 1753. *Viscaria vulgaris* Roehl. Deutsch. Fl. 2: 275. 1812.

DISTRIBUTION: Cultivated; introduced from Europe, occasionally escaping and apparently rarely persisting as a weed. Maine to New York.

3. LYCHNIS APETALA L. Sp. Pl. ed. 1. 437. 1753.

KEY TO THE SUBSPECIES

1. Calyx conspicuously inflated; 1 (rarely 2-3)-flowered; plants of the arctic regions, ranging south more or less to the 60th parallel..... 3a. *L. apetala* subsp. *apetala*.
 1. Calyx not conspicuously inflated; 1-3 (5)-flowered; plants of the Rocky Mountains, ranging from more or less the 60th parallel, south.
 2. Stems lanate-pilose; leaves narrowly oblanceolate or linear..... 3b. *L. apetala* subsp. *attenuata*.
 2. Stems puberulent; leaves usually oblanceolate..... 3c. *L. apetala* subsp. *montana*.

3a. LYCHNIS APETALA L. subsp. **apetala**. *L. apetala* L. Sp. Pl. ed. 1. 437. 1753. *Melandrium apetalum* (L.) Fenzl in Ledeb. Fl. Ross. 1: 326. 1842. *Wahlbergella apetala* (L.) Fries, Summa Veg. Scand. 155. 1845. *W. apetala* (L.) Fries, β *arctica* Fries in Öfvers. Vet. Akad. Förhandl. 133. 1869. *L. nesophila* Holm in Fedde, Rep. Spec. Nov. 3: 338. 1907. *M. macropermum* A. E. Porsild, RHODORA 41: 225. 1939. *L. apetala* L. forma *arctica* (Fries) Polunin, Bull. Nat. Mus. Can. no. 92. 184. 1940. *M. apetalum* (L.) Fenzl, ssp. *arcticum* (Fries) Hultén, Fl. Alaska and Yukon 700. 1943.

TYPE LOCALITY: "Habitat in Alpibus Lapponicis, Sibiricis."

DISTRIBUTION: Greatly polymorphic, the exserted petal (forma *arctica*) character seemingly to be correlated with the proterandrous condition; plants of moist habitat; circumpolar; in North America the islands of the Bering Straits, the Aleutian Islands, Alaska, Yukon Territory eastward through arctic

Canada, the Canadian Archipelago (Grant Land $82^{\circ} 27' N.$), the Hudson Straits region, Labrador, and Greenland (here reaching $83^{\circ} 6' N.$ *Ostenfeld*).

3b. *L. APETALA* L. var. *GLABRA* Regel, Bull. Mosc. **34²**: 570. 1861. Totally glabrous, but otherwise exhibiting the polymorphy of the subspecies; an infrequent variant of no geographical segregation.

TYPE LOCALITY: "Im Felsengebirgern Nordamerika." Type probably the *E. Bourgeau* "Rocky Mountains 1858" collection of the Palliser's Brit. N. Am. Expl. Expedition (? ISOTYPES at Gray Herbarium and New York Botanical Garden).

3b. *L. APETALA* L. subsp. ***attenuata*** (Farr) Maguire, comb. nov. *L. attenuata* Farr, Trans. & Proc. Bot. Soc. Penna. **1**: 419. 1904.

TYPE LOCALITY: "Lake Louise, near Laggan, July 16, 1904," *E. M. Farr* (University of Pennsylvania).

DISTRIBUTION: Higher altitudes in the Canadian Rocky Mountains, British Columbia and Alberta, Mount Selwyn ($56^{\circ} 1' N.$) south to the Elbow River ($49^{\circ} 40' N.$).

3c. *L. APETALA* L. subsp. ***montana*** (S. Wats.) Maguire, comb. nov. *L. montana* S. Wats. Proc. Am. Acad. **12**: 247. 1877.

TYPE LOCALITY: "Mountain peaks of Colorado, (n. 132 Parry)" (Gray Herbarium).

DISTRIBUTION: Meadows and tundra about timber-line, Rocky Mountains, Montana south into Colorado, the Uinta and La Sal Mountains, Utah.

MELANDRIUM MACROSPERMUM AND *M. SOCZAVIANUM*

For more than a hundred years four species of *Lychnis* had been widely known from arctic America and Greenland, for the greater part polymorphous and variable. Of these *L. alpina*, confined to Greenland and adjacent North America in our range, with almost complete capsular dissemination, has never been confused with the other more extensively distributed species having little or no capsular partition, *viz.*: *L. apetala*, *L. furcata*, and *L. triflora*. Of these, *L. triflora*, itself polymorphous with wingless seed and agglomerate inflorescence, is easily separable from *L. apetala* and *L. furcata* with winged seed and but a single flower, or several flowers in an open inflorescence. It is the latter two species and possible relatives that are concerned in the immediate consideration.

Lychnis apetala, completely circumpolar and quite variable, is characterized essentially by its included or shortly exserted lilac-colored, or sometimes white petals, its membranous and finally inflated calyx, its large more or less reniform margined seed with

inflated testa, and most conspicuously by its nodding young flowers that become erect at maturity. Hultén (Fl. Alaska and Yukon 701. 1943) reports, however, particularly in Scandinavia, that the flowers may at times be erect.

Lychnis furcata, likewise, is circumpolar and exceedingly variable, but in contrast to *L. apetala*, has conspicuous white, pink, or reddish petals, flowers erect through anthesis, calyx that more often is firmer, although frequently becoming membranous and inflated, and smaller, inflated, margined seed. Habitually these two species are similar, *L. furcata* commonly becoming somewhat larger than *L. apetala*.

It is thus obvious that at maturity the two species are difficult of separation, the not always dependable seed-differences being the only means of identification. In addition, there are many intermediate plants suggesting frequent hybridization, this possibility gaining credence by Polunin's observations of *L. affinis* (Bull. Nat. Mus. Can. No. 92. pp. 181 and 184. 1940).

Two additional entities have now been recognized for our area that seem to come within the limits of characterization given for (or actually to combine characters of) *L. apetala* and *L. furcata*, viz. *Melandrium macrospermum* A. E. Porsild, and *M. Soczavicanum* Schischk., the latter attributed to Alaska by Hultén by two collections, Anderson 3502 and 3700, both of which I have before me.

M. macrospermum had been known to Porsild only from the type collection (A. E. and R. T. Porsild 1147), distinguished by him from *L. apetala* largely by its "pubescent, urceolate" (the quotations those of Porsild) calyx, as against a "thin, papery, dark purple, puberulent, glutinous, almost globular" calyx; "flower 1 or 2, lateral, long peduncled," as against "flowers solitary (very rarely two), nodding throughout anthesis and erect only when capsule is mature"; and "petals pale rose" as against "petals purple" for *L. apetala*. While admittedly there may be a general "look" in the field that sets the two populations apart, from characters that appear in herbarium-specimens, I am unable to see that *M. macrospermum* so circumscribed does not well come into the limits of *L. apetala*.

Hultén admits *M. macrospermum* to the Flora of Alaska and Yukon, citing a number of collections, among them Anderson

5087. This specimen is a good match for A. E. and R. T. Porsild 988, likewise from Alaska, distributed as *M. apetalum*.

The two Anderson Alaskan collections cited by Hultén as *M. Soczavianum* are low-growing plants in early anthesis, with nodding heads. They appear to me to be *L. apetala*, but with exserted petals, or to be immature specimens of *L. furcata* with nodding heads. Hultén suggests that these plants might actually be identical with *M. macrospermum*, or indeed might represent an altogether new species.

The writer cannot bring himself to interpret these two collections as belonging to a species distinct from *L. furcata* or *L. apetala* merely on the basis of the combination of characters of the two species, especially in view of the probably frequent hybridization between them.

From the above consideration it becomes necessary to consider *M. macrospermum* to be a part of *L. apetala*, and the American specimens referred to *M. Soczavianum* must be considered as intermediate between *L. apetala* and *L. furcata*.

In the following table attempt has been made to offer comparable and contrastive characters available for the four names discussed.

4. LYCHNIS FURCATA² (Raf.) Fernald, RHODORA 34: 22. 1932.

KEY TO THE SUBSPECIES

1. Mature calyx (10) 11–15 mm. long; seed 1.0–1.2 (1.5) mm. broad; plants of Greenland and Arctic America 4a. *L. furcata* subsp. *furcata*.
1. Mature calyx (8) 10–12 (14) mm. long; seed 1.2–1.5 mm. broad; plants of Alaska, Yukon and the western Hudson Bay region..... 4b. *L. furcata* subsp. *elatior*.

4a. LYCHNIS FURCATA (Raf.) Fernald, subsp. ***furcata***.

Silene furcata Raf. Autikon Botanikon, 28. 1940. *Lychnis furcata* (Raf.) Fern. RHODORA 34: 22, in large part. 1932. *L. affinis* J. Vahl ex Fries, Nov. Fl. Suec. Mantissa 3: 36, as to Greenland reference. 1842. *Melandrium pauciflorum* (Ledeb.) Ostenf. Meddel. Grönland 64: 173, as to Greenland plants. 1923.

If the Siberian *Lychnis pauciflora* Ledeb. Ném. Acad. Pétersb. 5: 537. 1814, proves to be conspecific with plants interpreted here

² LYCHNIS FURCATA (Raf.) Fernald, subsp. *affinis* (J. Vahl) Maguire, comb. nov. *L. affinis* J. Vahl ex Fries, Nov. Fl. Suec. Mantissa 3: 36, as to type and plants of arctic Europe and Siberia. 1842. *Wahlbergella angustiflora* Rupr. Fl. Samojed. 24, in part. 1843. *Melandrium furcatum* (Raf.) Hultén subsp. *angustiflorum* Hultén, hyponym, Fl. Alaska and Yukon 703. 1943.

<i>L. apetala</i> ssp. <i>apetala</i>	<i>M. macrostpermum</i>	<i>M. Socczanianum</i>	<i>L. furcata</i>
1. Stems 5–15 (30) cm. tall.	1. Stems 15–25 cm. tall.	1. "Plant resembles <i>M. furcata</i> ."	1. Stems 5–35 (40) cm. tall.
2. Flowers nodding in anthesis.	2. Flowers apparently not nodding in anthesis (but not specifically so stated by Persild).	2. Flowers "sometimes nodding."	2. Flowers erect in anthesis.

3. Calyx inflated, membranous, broadly elliptic-ovate to subglobose, 12–15 (18) mm. long; scantily or moderately pubescent with moniliform pigmented hairs, most densely so along the veins, sometimes completely glabrous, frequently viscid.	3. Calyx "urnshaped" 1.5 cm. long, 1.0 cm. wide, "pubescent."	3. Calyx elliptic-ovoid 10–12 mm. long, (immature), sub-pilose.	3. Calyx 10–16 mm. long, elliptic-ovoid, sometimes becoming inflated and membranous at maturity, moderately puberulent and sometimes glandular, to densely pilose with moniliform pigmented hairs, and viscid, rarely completely glabrous.
4. Petals included or exserted by 1–3 mm., white or lilac-colored.	4. Petals "barely exserted, rose."	4. Petals "long and dark lilac colored instead of white."	4. Petals conspicuously exserted, white pinkish or reddish.
5. Seed reniform-orbiculat, 1.5–2.5 mm. broad, testa light brown, inflated, forming an inflated or collapsed winged margin equaling or somewhat less than the diameter, of the embryo; the surface with more or less conspicuous rounded or flattened papillae.	5. Seed "reniform, pale brown, 2.0–2.4 mm. wide and 1.8 mm. long, strongly punctate, with broad inflated wing."	5. Seed unknown to the writer.	5. Seed 1.0–1.5 mm. broad, subreniform, the testa inflated, forming a winged margin, the surface almost smooth.

as *L. furcata* (so concluded by Prof. Ostenfeld), then the older epithet *pauciflorum* would supersede any other now applied to this diverse circumpolar entity.

TYPE LOCALITY: "Labrador and Hudson Bay." TYPE UNKNOWN.

DISTRIBUTION: Eastern Arctic America, northern Labrador, Greenland, Spitzbergen, and Nova Zembla.

4b. *LYCHNIS FURCATA* (Raf.) Fernald, subsp. **elatior** (Regel) Maguire, comb. nov. *L. apetala* L. var. *elatior* Regel, Bull. Mosc. **34⁴**: 573, most part. 1861. *L. Taylorae* Robinson, Proc. Am. Acad. **28**: 150. 1893. *Melandrium Taylorae* (Robins.) Tolm. Trav. Mus. Bot. Acad. Sc. U. R. S. S. **24**: 267. 1932. *L. brachycalyx* Raup, Sargentia **6**: 173. 1947.

The species *L. brachycalyx* as proposed by Dr. Raup, has been characterized as distinct from *L. furcata* essentially by its short calyx, which in the type (Colonel Mt. Brintnell Lake, S. W. Mackenzie, Raup 9821, stated to be "occasional in this situation but not seen elsewhere.") is "11.5 mm. crasso et 9 mm. alto", compared with *L. furcata* in which "the calyx is 9–12 mm. broad and 12–15 mm. high." No specimens of this have been seen by the writer. From the description and figure (l. c. p. 174), it would seem that the plants in question are closely similar to the following and with them may be associated with *L. furcata*. ssp. *elatior*, viz.: Klondike River, July 15, 1902, John Macoun, Geol. Surv. Can. 58402; Churchill, July 26–Aug. 18, 1910, J. M. Macoun, Geol. Surv. Can. 79078; stream by West Dawson, July 30, 1899, R. S. Williams sine no.; and Peel River, Mackenzie River Delta, July 15, 1892, E. Taylor, the type of *Lychnis Taylorae*. These specimens with calyx from 8–12 mm. long and reduced petals have been interpreted as depauperate or etiolated plants.

TYPE LOCALITY: "Baicalien, am Flusse Bargusin (Turczaninoff). Russisches America in Kadjak. (Exp. d. Admiralität)."

DISTRIBUTION: Eastern Arctic Asia, Alaska, and Yukon, eastward to the Hudson Bay Region, Manitoba, and possibly along the Arctic coast. A more eastern collection that seemingly belongs here is, Lake Harbour, Baffin Island, Polunin 434 (Gray Herbarium).

LYCHNIS FURCATA subsp. **ELATIOR** var. **glabra** (Hultén) Maguire, comb. nov. *L. Funstonii* Wight ex Mertie, U. S. Dept. Inter. Geol. Surv. Bull. 836-E: 364. 1932. Nomen. *Melandrium*

Taylorae (Robins.) Tolm. var. *glabrum* Hultén, Fl. Alaska and Yukon 4: 705. 1932.

TYPE LOCALITY: Coal Creek Hill, Central Yukon River, Alaska, Funston 81. ISOTYPE, New York Botanical Garden.

As suggested by the name, this plant is glabrous and seems to be no more than a glabrous form of the subsp. *elatior*. Other than the type, there seems to be no record of glabrous specimens of the subspecies within our range.

5. LYCHNIS TRIFLORA R. Br. in Ross' Voy. Disc. Append. 142. 1819.

KEY TO THE SUBSPECIES

1. Stems 5–15 (20) cm. tall, pubescence more or less densely sub-pilose; mature calyx 10–12 mm. long, ellipsoid-campanulate to campanulate; seed muricate-tuberculate on the back; apparently confined to Greenland. 5a. *L. triflora* subsp. *triflora*.
1. Stems 15–30 cm. tall, villous or merely puberulent; mature calyx 8–10 mm. long, narrowly ellipsoid-campanulate; seed low-tuberculate on the back; Arctic Canada. 5b. *L. triflora* subsp. *Dawsoni*.

5a. LYCHNIS TRIFLORA R. Br. subsp. **triflora**. *L. triflora* R. Br. in Ross' Voy. Disc. Append. 142. 1819.

TYPE LOCALITY: Greenland.

DISTRIBUTION: Apparently confined to Greenland (cf. A. E. Porsild, Sargentia 4: 36. 1943); possibly also "east coast of Baffin" (cf. Polunin, Bot. Can. East. Arctic 183. 1940).

5b. LYCHNIS TRIFLORA R. Br. subsp. **Dawsoni** (Robins.) Maguire, comb. nov. *L. triflora* R. Br. var. *Dawsoni* Robins. Proc. Am. Acad. 28: 149. 1893. ? *Melandryum taimyrense* A. Tolm. Trav. Bot. Mus. Acad. Sci. U. R. S. S. 24: 264. 1932. ? *M. Ostenfeldii* A. E. Porsild, Sargentia 4: 37. 1943. *L. Dawsonii* (Robins.) J. P. Anderson, Iowa State College Journ. Sci. 20: 251. 1946.

TYPE LOCALITY: 100 miles northeast of Dease Lake, British Columbia, Dr. G. M. Dawson (Gray Herbarium).

DISTRIBUTION: gravelly banks and rocky places, the region of Great Slave Lake and northward; Copper Center, Alaska, Anderson 2047.

In the proposal of *M. Ostenfeldii*, Porsild (l. c.) had unfortunately overlooked Robinson's *L. triflora* var. *Dawsoni*. The type of var. *Dawsoni* and *Dawson* 2649 from Dease River, lat. 59° N. quite faithfully fit into the description of *M. Ostenfeldii*. The subsp. *Dawsoni* may be specifically distinct from *L. triflora*.

6. LYCHNIS KINGII S. Wats. Proc. Am. Acad. 12: 247. 1877. *L. ajanensis* S. Wats. Bot. King's Expl. Exped. 5: 37. 1871, not *L. ajanensis* Regel, Bull. Soc. Nat. Mosc. 34²: 564. 1861.

TYPE LOCALITY: "Peaks of the Uintas at head of Bear River." Utah, *Parry* 43 (Gray Herbarium).

DISTRIBUTION: Alpine regions, Rocky Mountains, Wyoming, Colorado and Utah.

7. LYCHNIS DRUMMONDII (Hook.) S. Wats. Bot. King's Expl. Exped. 5: 37. 1871.

KEY TO THE VARIETIES

1. Petals included..... 7a. *L. Drummondii* var. *Drummondii*.
1. Petals exserted by 2-4 mm..... 7b. *L. Drummondii* var. *striata*.

7a. LYCHNIS DRUMMONDII var. **Drummondii**. *L. Drummondii* (Hook.) S. Wats. Bot. King's Expl. Exped. 5: 37. 1871. *Silene Drummondii* Hook. Fl. Bor.-Am. 1: 89. 1830.

Melandrium Drummondii (Hook.) Hultén, Fl. Alaska and Yukon 4: 702. 1944.

TYPE LOCALITY: "Plains of the Saskatchewan. *Dr. Richardson*; *Drummond*. Common on . . . gravelly soils, near Fort Vancouver, and skirting the Blue Mountains. *Douglas*."

DISTRIBUTION: Open montane slopes and woodlands, to 11,000 feet; Northwest Territory and British Columbia to Saskatchewan and North Dakota to Washington?, western Nebraska, Colorado, northern Arizona and southern Nevada.

7b. LYCHNIS DRUMMONDII var. **striata** (Rydb.) Maguire, comb. nov. *L. striata* Rydb. Bull. Torrey Club 31: 408. 1904. *L. Drummondii* (Hook.) S. Wats. var. *nuda* Maguire, Madroño 6: 26. 1941, not *L. nuda* S. Wats. Bot. King's Expl. Exped. 5: 37. 1871.

Similar to the var. *Drummondii* but with exserted petals.

TYPE LOCALITY: Cameron Pass, Colorado, 1896, C. F. Baker (New York Botanical Garden).

DISTRIBUTION: Occurring with the typical population, and seemingly mostly confined to the center of distribution in Wyoming, Idaho, Utah, and Colorado. Possibly not varietally distinct.

8. LYCHNIS MEXICANA Rose, Contr. U. S. Nat. Herb. 5: 141. 1897.

Apparently known only by two collections, the TYPES: Sierra de Ajusco, altitude 3,215 meters, 1896, C. G. Pringle 6456; and Lava beds, La Cima de Ajusco, 9800 feet, Aug. 2, 1906, Pringle 13774. Both specimens have stems that are nearly glabrous at the base, and very thinly lanate towards the summit.

9. LYCHNIS ALBA Mill. Gard. Dict. ed. 8. no. 4. 1768. *L. vespertina* Sibth. Fl. Oxon. 146. 1794. *Melandrium vespertinum* (Sibth.) Fries, Bot. Notiser 170. 1842.

DISTRIBUTION: A weedy species naturalized from Europe, frequent in eastern North America; from Nova Scotia and Quebec to Michigan and Washington, southward to California,

Utah, Missouri and Georgia, perhaps the distribution more extended. Frequently confused with *Silene noctiflora*.

10. *LYCHNIS DIOICA* L. Sp. Pl. ed. 1. 437. 1753. *L. dioica* var. *rubra* Weigel, Fl. Pom.-Rug. 85. 1769. *L. diurna* Sibth. Fl. Oxon. 145. 1794.

DISTRIBUTION: Introduced from Europe, occurring as a weed in eastern North America; Newfoundland, Nova Scotia, Quebec, Ontario and Minnesota, south to Virginia and Missouri.

11. *LYCHNIS CHALCEDONICA* L. Sp. Pl. ed. 1. 436. 1753. Genotype. *Agrostemma chalcedonica* (L.) Döll, Rhein. Fl. 643. 1843.

DISTRIBUTION: Introduced into cultivation from Asia; in America escaped and now occasionally spontaneous in the Northeast, from Prince Edward Island and Maine to Michigan, probably elsewhere.

12. *LYCHNIS FLOS-CUCULI* L. Sp. Pl. ed. 1. 436. 1753. *Melandrium Flos-cuculi* (L.) Roehl, Deutschl. Fl. ed. 2. 275. 1812. *Coronaria Flos-cuculi* (L.) A. Br. in Flora **26**: 368. 1843.

DISTRIBUTION: Of European origin, escaped from cultivation and frequently naturalized; waste places, Quebec, New Brunswick, New England and New York.

13. *LYCHNIS CORONARIA* (L.) Desr. in Lam. Encycl. **3**: 643. 1789. *Agrostemma coronaria* L. Sp. Pl. ed. 1. 436. 1753. *Coronaria tomentosa* A. Br. in Flora. **26**: 368. 1843.

DISTRIBUTION: Of European origin, frequently escaped from cultivation and now apparently established in many areas; Maine, Vermont, Massachusetts, New York, Ohio, Indiana, British Columbia, Washington, Oregon, and probably elsewhere.

2. *AGROSTEMMA* L. Sp. Pl. ed. 1. 435. 1753;
Gen. ed. 5, 198. 1754.

1. *AGROSTEMMA GITHAGO* L. Sp. Pl. ed. 1. 435. 1753. *Lychnis Githago* Scop. Fl. Carn. ed. 2. **1**: 310. 1772.

DISTRIBUTION: Middle and southern Europe; introduced and widely established as a weed of grain fields, roadsides and waste places in much of temperate North America.

3. *SILENE* L. Sp. Pl. ed. 1. 416. 1753.

For a revision of the North American species of *Silene* see: Hitchcock and Maguire, Pub. Wash. Univ. Biol. **13**: 1–73. 1947.

4. *SAPONARIA* L. Sp. Pl. ed. 1. 408. 1753; Gen. ed. 5. 191. 1754.

1. *SAPONARIA OFFICINALIS* L. Sp. Pl. ed. 1. 408. 1753.

DISTRIBUTION: Of Old World origin; common in cultivation and frequently escaped, easily becoming spontaneous along roadsides and in waste places, spreading by rootstalks. To be found in most of temperate North America.

5. VACCARIA Medic. Phil. Bot. 1: 96. 1789.

1. VACCARIA SEGETALIS (Neck.) Garcke ex Aschers. Fl. Brandenb. 1: 84. 1864. *Saponaria segetalis* Neck. Delic. Gallo-Belg. 1: 194. 1768. *Vaccaria pyramidata* Medic. Phil. Bot. 1: 96. 1789. *Saponaria Vaccaria* L. Sp. Pl. ed. 1. 409. 1753. *Vaccaria Vaccaria* (L.) Britt. in Britt. & Brown Ill. Fl. 2: 18. 1897.

DISTRIBUTION: Of European origin; a weed largely throughout temperate North America, as far north as Alaska. Frequently abundant in grain fields.

6. GYPSOPHILA L. Sp. Pl. ed. 1. 406. 1753. Gen. ed. 5, 191. 1754.

KEY TO THE SPECIES

1. Annual; diffuse, the stems 1.0–1.5 dm. tall; flowers axillary . . . 1. *G. muralis*.
1. Perennial or annual; the stems 2 or more dm. tall; inflorescences paniculate.
 2. Calyx 2.0–2.5 mm. long; petals 5 mm. or less long 2. *G. paniculata*.
 2. Calyx 4–5 mm. long; petals ca. 10 mm. long 3. *G. elegans*.

1. GYPSOPHILA MURALIS L. Sp. Pl. ed. 1. 408. 1753.

DISTRIBUTION: Widely distributed in Eurasia; established locally as a weed in New England, Michigan and Minnesota.

2. GYPSOPHILA PANICULATA L. Sp. Pl. ed. 1. 407. 1753.

DISTRIBUTION: Middle and southern Europe to western Siberia; escaped from cultivation and locally established in Manitoba and Nebraska, perhaps elsewhere.

3. GYPSOPHILA ELEGANS Bieb. Fl. Taur. Cauc. 1: 319. 1808.

DISTRIBUTION: Caucasus, Armenia, and the upper Euphrates region; reportedly escaped from cultivation and established in North Dakota.

7. VELEZIA L. Sp. Pl. ed. 1. 332. 1753; Gen. ed. 5, 155. 1754.

1. VELEZIA RIGIDA L. Sp. Pl. ed. 1. 332. 1753.

DISTRIBUTION: Southern Europe, and the Mediterranean area; in North America established as a weed from northern to central California.

8. DIANTHUS L. Sp. Pl. ed. 1. 409. 1753; Syst.

ed. 1. 710. 1753; Gen. ed. 5, 191. 1754.

KEY TO THE SPECIES

1. Flowers solitary or few.
2. Rootstalk slender, branched; stems slender, branched; calyx 12–15 mm. long 1. *D. deltoides*.
2. Rootstalk coarse or the caudex multicarpital.
 3. Leaves mostly basal; stems mostly 2–3 dm. tall; infrequent weed in New England 2. *D. plumarius*.
 3. Leaves not conspicuously basal; stems mostly 1 dm. or less tall; indigenous to Alaska 3. *D. repens*.
1. Flowers many in a congested inflorescence.
4. Perennial; leaves 10–18 mm. broad 4. *D. barbatus*.
4. Biennial; leaves 2–8 mm. broad 5. *D. Armeria*.

1. DIANTHUS DELTOIDES L. Sp. Pl. ed. 1. 411. 1753.

DISTRIBUTION: Introduced from Europe; locally established as a weed, New Hampshire and Vermont to New York.

2. DIANTHUS PLUMARIUS L. Sp. Pl. ed. 1. 411. 1753.

DISTRIBUTION: Central and southeastern Europe; escaped from cultivation and established locally in New Hampshire and Massachusetts.

3. DIANTHUS REPENS Willd. Sp. Pl. 2: 681. 1799. *D. alpinus*
v repens (Willd.) Regel, Bull. Mosc. 34⁴: 530. 1861.

DISTRIBUTION: Arctic Europe and Siberia; Bering Straits; in Alaska from Cape Lisburne and the central Yukon south to Lake Tustumena.

4. DIANTHUS BARBATUS L. Sp. Pl. ed. 1. 409. 1753. Genotype.
Diosanthos barbatum St. Lager. Fl. Pyr. 3: 93. 1901.

DISTRIBUTION: Escaped from cultivation, locally established from Vermont to Michigan, south to New York.

5. DIANTHUS ARMERIA L. Sp. Pl. ed. 1. 410. 1753. *Diosanthus*
Armerium St. Lager, Ann. Soc. Bot. Lyon, 7: 87. 1880.

DISTRIBUTION: Introduced from Europe; spontaneous as a weed, Quebec and Ontario to Montana, Idaho, British Columbia and Washington, south to Missouri to Georgia.

9. TUNICA Scop. Fl. Carn. ed. 2. 1: 298. 1772.

KEY TO THE SPECIES

- | | |
|---------------------------------------|--------------------------|
| 1. Annual; calyx 10–13 mm. long..... | 1. <i>T. prolifera</i> . |
| 1. Perennial; calyx 4–5 mm. long..... | 2. <i>T. Saxifraga</i> . |

1. TUNICA PROLIFERA (L.) Scop. Fl. Carn. ed. 2. 1: 299. 1772.
Dianthus prolifer L. Sp. Pl. ed. 1. 410. 1753.

DISTRIBUTION: Introduced from Europe; sparingly established in waste places, New York to South Carolina, and California.

2. TUNICA SAXIFRAGA (L.) Scop. Fl. Carn. ed. 2. 300. 1772.
Dianthus Saxifragus L. Sp. Pl. ed. 1. 413. 1753.

DISTRIBUTION: Introduced from Europe; established as a roadside weed. Flushing, L. I.; probably elsewhere.

NEW YORK BOTANICAL GARDEN

DEATH OF MERRITT LYNDON FERNALD

It is with great regret that we record the sudden death, on September 22, 1950, of Professor Merritt Lyndon Fernald, an editor of RHODORA since its inception, and Editor-in-Chief since 1929.

THE EDITORIAL BOARD

THE VALIDITY OF THE GENERIC NAME PTERETIS

M. L. FERNALD

THE Ostrich-Fern of Eurasia, first placed by Linnaeus in *Osmunda*, was separated by Willdenow, Enum. 1071 (1809) as the genus *Struthiopteris* (L.) Willd.; but the ancient generic name *Struthiopteris* had already been applied, after 1753, to other genera: especially by Weis in 1770 for the plant called by Linnaeus (1753) *Osmunda spicant* and later called *Blechnum spicant* (L.) Roth (1794). The name *Struthiopteris* Willd. (1809) was, therefore, a later homonym and has until recently been replaced by *Matteuccia* Todaro (1866). In 1818, however, Rafinesque had substituted for *Struthiopteris* Willd., which was an illegitimate name because of the earlier *Struthiopteris* of Weis (1770), the name *Pteretis* Raf. in Am. Mo. Mag. Crit. Rev. ii. 268 (1818), a new name given as a substitute for *Struthiopteris* Willd. (1809), not Weis (1770). This matter was discussed in great detail by Nieuwland in Am. Midl. Nat. iii. 194–197 (1914), although Nieuwland, with his devotion to pre-Linnaean names, somewhat involved the discussion. His summarizing paragraph, omitting the references prior to 1753, was as follows:

Pteretis Raf. Am. Month. Mag., II., p. 268, (1818).
Matteuc[cia] Todaro, Geor. Sci. Nat. Palermo, I., p. 235, (1866).
Stri[u]thiopteris Willd. Enum. p. 1071, (1809) . . . not *Struthiopteris* . . . Weiss [Weis] . . . = *Lomaria Spicant* (Linn.) Desvaux.

Nieuwland's taking up of *Pteretis* was the correct course, in spite of his typographic carelessness and his error, under the new combination *Pteretis Struthiopteris* (Linn.) Nieuwland, in citing the basonym as "Matteuccia Struthiopteris Linn. Sp. Pl. p. 1066, (1753)" instead of *Osmunda Struthiopteris*, the name used by Linnaeus.

Others correctly took up *Pteretis* (1818) as a properly published generic name; but Copeland, Gen. Fil. 103 (1947), using *Matteuccia* (1866), rejects *Pteretis* (1818) because it "was never tolerably published". However, admitting the eccentricity of Rafinesque's methods, there seems to be no question of its validity, as indicated in the International Rules of Botanical Nomenclature, Art. 42 (2), which reads:

A name of a genus is not validly published unless it is accompanied . . . (2) by the citation of a previously and effectively published description of the genus under another name.

As an example of such valid publication the Rules give

Thuspeinantha Th. Dur. (*Ind. Gen. Phanerog.* p. x: 1888), accompanied by a reference to the previously described genus *Tapeinanthus* Boiss. (non Herb.).

Pteretis Raf. was quite parallel with *Thuspeinantha*: the replacement of an invalid earlier name of a genus which was properly described; and as such it was listed by Christensen, *Ind. Fil. Suppl.* ii, 30 (1917). The name was taken up by me in *RHODORA*, xxxvii. 219 (1935) and by Small, *Ferns Vic. N. Y.* 140 (1935); by Merrill in *Am. Fern. Journ.* xxxiii. 56 (1943) and his *Ind. Raf.* 72 (1949) with correct bibliography as a “*Nomen validum*”; and its adoption in the American Fern Journal and by most recent students in America speaks for itself. Many botanists have regretted (and so stated) the frequent upsets in the names of our North American Ostrich-Fern, *Pteretis pensylvanica* (Willd.) Fern. in *RHODORA*, xlvi. 123 (1945). Now, “Malgré la synonymie chargée de cette fougère”, M. Marcel Raymond, feeling that “on ne peut employer *Pteretis* Raf., parce que, comme COPELAND l'a démontré avec autorité . . . ce genre n'a jamais été publié conformément aux règles”, has added to the synonymy another name: *Matteuc[cia] pensylvanica* (Willd.) Raymond in *Naturaliste Canad.* lxxvii. 55 (1950). This combination, published under a misconception, will stand only if the perpetually tinkered “permanent” Rules are altered by the conservation of *Matteuccia*.

THE SEEING INVALIDITY OF SOME SUBSTITUTES FOR THE NAME *HABENARIA STRAMINEA*.—In *RHODORA*, xxviii. 174 (1926) the species *Habenaria straminea* Fernald was first published, its type from calcareous barrens along the Straits of Belle Isle in northern Newfoundland, but the species also occurring in southern Greenland, Iceland and on the Faroe Islands, where it had been misidentified with the European *H. albida* (L.) R. Br. In 1929 Mr. Frank Morris, doubting the specific distinctness of our plant, called it *H. albida* (L.) R. Br., var. *straminea* (Fern.) F.

Morris in Morris & Eames, Our Wild Orchids, 69, plates 23 and 24 (1929); and in RHODORA, xxxv. 237–239, t. 251, figs. 1 and 2 (1933) I showed by photography, the new species and enlarged flowers (fig. 3) of the European *H. albida*. To me, as to Asa Gray, Sereno Watson, Britton and Ames, the latter a life-long student of the *Orchidaceae*, *Habenaria* is a natural and inclusive genus. To many Europeans, with far fewer representatives of the group than in North America, it is a series of genera. Nevertheless, in other and less sensational families than the *Orchidaceae* they do not segregate groups with profound morphological differences into microgenera! Surely, *Salix*, § *Reticulatae* Fries, the genus *Chamitea* Kerner, is in its morphological characters, geographic range and habit more strikingly unlike § *Pentandrae* Dumort., the genus *Lusekia* Opiz, than are the reputed generic segregates of *Habenaria*. Nevertheless, *Salix*, with relatively inconspicuous flowers, is kept intact. Plenty of other aggregate-genera, which are quite as separable as the elements in inclusive *Habenaria*, are kept intact by the *Habenaria*-splitters: such groups as *Saxifraga* or *Rubus*, for example; for, if there are subgenera or sections as definitely separable as are the reputed genera of the aggregate *Habenaria*, they occur in *Rubus*. *Rubus* subgenera *Chamaemorus* (Ehrh.) Focke, *Cylactis* (Raf.) Focke (Genus *Cylactis* Raf.), *Idaeobatus* Focke and *Eubatus* Focke are quite as eligible for generic separation as are the so-called genera segregated in Europe (and, of course, by Small, Rydberg and their followers in America) from the natural group, *Habenaria*.

The primary object of this note, however, is to protest against the very doubtful and apparently illegitimate publication of alternative or provisional combinations without regard for the International Rules of Botanical Nomenclature. Prior to the International Congress of 1930 the unfortunate situation was realized and discussed, but it was soon referred to the Executive Committee for decision, an effective means of wholly sidetracking it. At Amsterdam in 1935 (see Sirks, Zesde Internat. Bot. Congr. Proc. i. 364, 366 (1936)) the matter (Art. 37 ter) was discussed and the article was accepted:

A name of a taxonomic group is not validly published unless it is definitely accepted by the author who published it. A name proposed provisionally (*nomen provisorium*) in anticipation of the eventual acceptance of the group, or of a particular circumscription, position or

rank of a given group, or merely mentioned incidentally is not validly published.

The special example brought before the Congress was "the case of the name *Cymbopogon Bequaertii* and *Andropogon Bequaerti* published simultaneously in *Bull. Jard. Bot. Bruxelles*, vi. p. 8 (1919) as follows."

"*Cymbopogon Bequaertii* DeWild. nov. sp.
Andropogon Bequaerti DeWild. nom. nov."

In the case at issue Löve in *Botaniska Notiser* (1950) 36, 37, wrote of the plant validly published as *Habenaria straminea* Fernald in *RHODORA*, xxviii. 174 (1926) and *RHODORA*, xxxv. 237, t. 251, figs. 1 and 2 (1933):

If named as species, the Icelandic-American type should bear the name *Leucorchis straminea* (FERN.) LÖVE, comb. nova (based on *Habenaria straminea* FERNALD, 1926, p. 174), but if placed as subspecies under the species *Leucorchis albida* it should be named ssp. *straminea* (FERN.) LÖVE, ssp. nova (based on *Habenaria straminea* Fernald, l. c.). In the latter case, the subspecies name ssp. *eu-albida* LÖVE, ssp. nova (based on *Satyrium albidum* L. 1753; *Habenaria albida* [L.] B. BR. s. str., excl. *H. straminea* FERN.) would be appropriate for the European type.¹

These combinations by Löve are all too tentative; they are the provisional or alternative types of names specially aimed at by Art. 37ter of the International Rules.—M. L. FERNALD.

¹ Löve gives a map (his fig. 7) in which he shows *H. straminea* in North America radiating from the Straits of Belle Isle northward into Labrador where it is unknown, and half-way down the eastern side of Newfoundland where it is also unknown. In Newfoundland it extends from the eastern end of the Straits southwestward along the calcareous coast!

OUR AMERICAN FORMS OF STELLARIA ALSINE

M. L. FERNALD

STELLARIA ALSINE Grimm in Nov. Act. Phys.-Med. Nat. Cur. iii. App. 313 (1767); Hoffm. Deutschl. Fl. 153 (1791). *S. uliginosa* Murr. Prodr. Comm. Gött. 55 (1770).

As pointed out by Handel-Mazzetti, Symb. Sin. Teil vii. 191 (1929), the characteristic plant of Eurasia and eastern North America, which has long been known as *Stellaria uliginosa* Murr. or *Alsine uliginosa* (Murr.) Britt., was first described as *S. Alsine* by Grimm in 1767, three years earlier than Murray's name and nearly a quarter-century before the independent publication of *S. Alsine* Hoffm. (1791). Grimm, using binomials, took the primary diagnosis from the pre-Linnaean at least in nomenclature Haller, source of many names taken over by post-Linnaean authors.

Innumerable minor variations of the plant have been defined in Eurasia, but most of them (under *Stellaria uliginosa*) seem to be mere responses to depth of water or degree of stranding—13 such forms enumerated by Gürke and 14 by Ascherson & Graebner. For the most part they seem very trivial, but two of them which occur in eastern North America are sufficiently striking as to attract notice. These are

STELLARIA ALSINE Grimm, forma **ovalifolia** (Peterm.) comb. nov. *Larbrea uliginosa*, aa. *ovalifolia* Peterm. Fl. Lips. 326 (1838). *S. uliginosa*, var. *latifolia* Peterm. Analyt. Pflzschlüssel Exc. Leipz. 57 (1846). *S. uliginosa*, forma *ovalifolia* (Peterm.) Aschers. & Graebn. Syn. Mitteleur. Fl. v. 547 (1917).

Typical *Stellaria Alsine*, the usual plant with us, has elongate stems and the leaves are elliptic-lanceolate or narrowly lanceolate, the principal blades mostly 1–2.5 cm. long and 2–7 mm. broad and in distant pairs. It is well represented by Pl. Exsicc. Gray. no. 211. Forma *ovalifolia* has the oval or broadly elliptic leaves relatively much broader (two-fifths to three-fifths as broad as long), the larger ones up to 3.5 cm. long, though in its smallest extreme only 0.8–1 cm. long but 5–6 mm. wide. This form is represented by very extreme specimens from Cap à l'Aigle, St. Pierre, St. PIERRE ET MIQUELON, 5 juillet 1900, Arsène (with leaves up to 3.5 cm. long); ledges of damp sea-cliffs,

Torbay, NEWFOUNDLAND, *Howe & Lang*, no. 1373 (suggesting large *S. media*); seepy clay bank near Great Bras d'Or, Iona, NOVA SCOTIA, *Fernald & Long*, no. 21,208 (leaves unusually short); Wilmington, DELAWARE (without further data), *Edward Tatnall*.

In the other direction the most extreme form is a plant only 0.5–1 dm. high, with subapproximate pairs of lanceolate firm leaves only 4–12 mm. long, and with very short peduncles. This is

S. ALSINE, forma **alpina** (Schur), comb. nov. *Larbrea uliginosa*, b. *alpina* Schur, Enum. Pl. Transs. 115 (1866). *S. uliginosa* Murr., n. *alpina* (Schur) Gürke in Richter ed. Gürke, Pl. Eu. ii. 210 (1899). *S. Alsine*, var. *alpina* (Schur) Handel-Maz., Symb. Sin. Teil vii. 191 (1929).

In Eurasia this form is usually subalpine. With us it is known only from ST. PIERRE ET MIQUELON: lieux humides, ruisseaux, fossés, Cap à l'Aigle, *Arsène*, no. 241. Some specimens from Newfoundland approach it.

THALLOPHYTES AND BRYOPHYTES OF THE CANADIAN EASTERN ARCTIC.¹—This represents the materialization of a volume which must have come near to being a wartime casualty. The work on which it is based was completed early in 1939 and the manuscript submitted for publication shortly thereafter. In its final form it is heavily documented by footnotes by the editor, most of which were added in 1946, in an effort to keep the manuscript up to date. The present volume, covering the nonvascular cryptogams of the region, is a follow-up of volume I, which was prepared by Polunin and which appeared in 1940, covering the Pteridophytes and Spermatophytes of approximately the same geographical area.

The region covered in the study includes an area of about 1,000,000 square miles of which a little less than half is said to be land. It is the area of North-eastern Canada lying roughly north of the 60th parallel and east of longitude 95 degrees west. An attempt is made to bring together in this one volume for the first time records of all the entities thus far known from the region whether previously published or not. This is said to have been accomplished for all the groups studied with the exception of the fungi and algae where older records have not been cited in detail but may be traced by the interested investigator through the cited literature. The foundation material for the volume is the collections made by Polunin and his associates in expeditions into the regions during the period 1934–36.

The contents of the volume consist of a Foreword, General Introduction, Summary, and Index to Latin names, all prepared by Polunin, and the main body of the work consisting of seven papers on the various groups of crypto-

¹ *Botany of the Canadian Eastern Arctic, Part II, Thallophyta and Bryophyta*, compiled and edited by NICHOLAS POLUNIN, National Museum of Canada, Bulletin 97 (Biological Series 26): [I]–V + [I]–573. 18 plates, text-figure 1–5, pocket map at back, 1947. Price: \$1.00.

gams, each prepared by a specialist in the particular group. These papers are as follows: *Algae* by ROY M. WHELDON, 13-137; *Marine Phytoplankton* by GUNNAR SEIDENFADEN, 138-177; *Freshwater Diatomaceae* by ROBERT ROSS, 178-233; *Fungi* by DAVID H. LINDER, 234-297; *Lichens* by BERNT LYNGE, 298-369; *Musci* by WILLIAM C. STEERE, 370-490; *Hepaticae* by NICHOLAS POLUNIN, 491-513. The total number of species recorded in the work is 1453 (remembering that previous reports are not included for the groups algae and fungi). The breakdown by group is algae 383, marine phytoplankton 125, freshwater diatoms 192, fungi 79, lichens 280, mosses 314, and liverworts 82. Each paper is essentially complete in itself and conforms in general to a prearranged pattern. It contains a general account followed by a list of species with literature and specimen citations, giving also general distribution and distribution within the area, but for the most part omitting descriptions except where proposed new taxonomic categories require it, and ending with a bibliography.

There are few of us who would be prepared to offer very much in the way of critical comment on a work of this sort. It certainly shows persistence and conscientious attention to detail on the part of the editor under a prolonged set of difficult and discouraging circumstances. It is an important work which will be fundamental to studies of the cryptogams of this and other northern regions for years to come. And in view of the presently stepped-up penetration of man into these regions it is to be assumed, and certainly to be hoped, that there will be increased attention to the cryptogamic as well as the higher forms of plant life which exist there.

Judgment as to whether or not the various specific determinations are accurate and critical and whether the "new species" described in some groups are really new might well be reserved until the specimens have been worked and reworked—with the passing of the years—for the type of monographic work that is needed to correlate the species of a region like this with those of other areas and to adequately find the limits of variation of the separate species, proceeds very slowly indeed. Being more familiar with the fungi than with the other groups treated I would venture a comment on that group alone. For one man to undertake to determine the fungi—from *Micromyces* to *Lycoperdon*—is, in view of the present state of our mycological literature, a pretty broad undertaking. One mycologist who specializes in the Agaricaceae has remarked to me that the treatment of that family in this volume was accurate enough to enable one who was familiar with the gill fungi on a world-wide basis to make an intelligent guess as to what species was represented.—W. LAWRENCE WHITE.

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